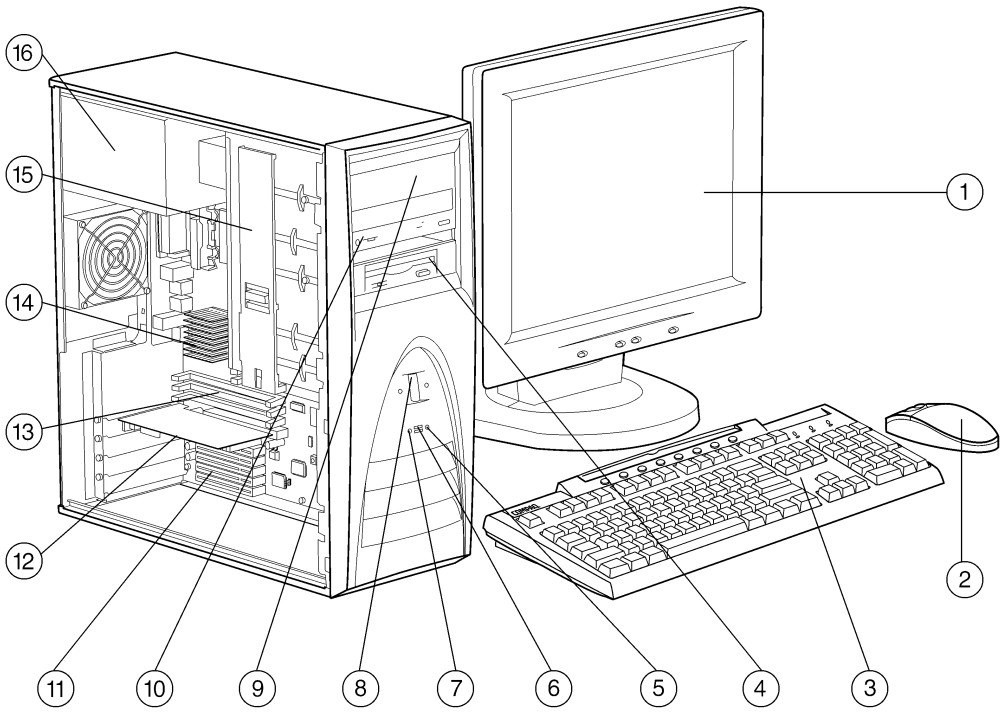
Overview

At A Glance

- Convertible minitower form factor
- Supports single Pentium 4 processor at speeds of 1.5, 1.7, or 2.0 GHz. (400 MHz Front Side Bus)
- Intel 845 chipset with 400-MHz front side bus
- 256-KB L2 cache integrated on processor
- PC133 ECC SDRAM expandable to 1.5 GB
- High-performance, Ultra ATA 7200rpm, Ultra160 SCSI 10,000 rpm or optional 15,000 rpm hard drives
- Integrated Ultra ATA/100 controller, Ultra160 SCSI controller (on SCSI models)
- Up to 216 GB of high-performance internal storage
- Choice of NVIDIA® Quadro2 EX, NVIDIA® Quadro2 MXR, NVIDIA® Quadro2 Pro, Matrox Millennium G450, Matrox Millennium G550, or Matrox G200 Quad Multi-Monitor Series Graphics Controller
- Multiple display support
- Integrated Intel PRO/100 VM Network Connection
- Six total slots (five PCI and one AGP Pro 4X)
- Five bays (three external and two internal)
- 48X Max CD-ROM Drive, DVD-ROM or CD-RW drive (depending on model)
- Two front USB ports and two front audio ports
- Integrated AC'97 audio with internal speaker
- Windows 2000 Professional or Windows NT Workstation 4.0 and Compaq support software pre-installed
- Protected by Compaq Services, including a three-year, limited warranty¨Certain restrictions and exclusions apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ



1. Compaq Monitor (optional)
2. 3-Button Mouse
3. Easy Access Keyboard
4. 1.44-MB Diskette Drive
5. Audio Port
6. USB Ports
7. Audio Port
8. On-Off Button
9. 5.25-in Drive Bay (available)
10. CD-ROM, DVD-ROM or CD-RW Drive
11. PCI Slots
12. AGP 4x Slot
13. Memory Sockets
14. Processor
15. Drivelock
16. 250-Watt Power Supply

COMPAQ

Standard Features - Pre-configured Models

Models	**Compaq Evo Workstation W4000** Available in multiple configurations.	
Processor *One of the following:*	Intel Pentium 4 processor 1.5 GHz Intel Pentium 4 processor 1.7 GHz Intel Pentium 4 processor 2.0 GHz	
Cache Memory	256-KB Level 2 cache	
Upgradability	Upgradeable memory, graphics, and hard drives	
Memory *One of the following:*	Standard Standard Standard Maximum	512 MB PC133 ECC SDRAM 256 MB PC133 ECC SDRAM 128 MB PC133 ECC SDRAM 1.5 GB (3 slots)
Network Controller	Integrated Intel PRO/100 VM Network Connection	
Expansion Slots	I/O (Total/Available) PCI AGP 4X	6/5 5/5 (depending on model) 1/0 (depending on model)
Expansion Bays	(Total/Available) Internal External	5/2 2/1 3/1
Storage	Diskette Drives	1.44 MB
	ROM Drives	48X Max CD-ROM Drive 16X/40X DVD-ROM Drive
	Hard Drives	72-GB, 36.4-GB, 18.2-GB Ultra160 SCSI (10,000 rpm) 18.2-GB Ultra160 SCSI (15,000 rpm) 60-GB, 40-GB or 20-GB Ultra ATA/100 (7200 rpm)
	Removable Storage	16X/10X/40X CD-RW Drive 250-MB ATAPI ZIP

Standard Features - Pre-configured Models

Interfaces	Parallel	1 (front)
	USB	4 (2 front, 2 rear)
	Serial	2 (rear)
	Ultra 160 SCSI	2 (1 68-pin internal) (rear)
	Ultra ATA/100	2 (1 primary, 1 secondary)
	Keyboard (PS/2)	1 (rear)
	Pointing Device (PS/2 mouse)	1 (rear)
	Video	1 (rear)
	Microphone Jack	1 (front)
	Headphone Jack	1 (front)
	Line-In Jack	1 (rear)
	Line-Out Jack	1 (rear)
	RJ-45	1 (rear)
Graphics	Matrox Millennium G450 (AGP)	
One of the following:	Matrox Millennium G550 (AGP)	
	Matrox G200 Quad Multi-monitor Series (PCI)	
	NVIDIA® Quadro2 EX LP	
	NVIDIA® Quadro2 MXR (AGP)	
	NVIDIA® Quadro2 Pro (AGP)	
Audio	Integrated AC'97 audio	
	Internal Speaker	
Software	Microsoft Windows NT Workstation 4.0 or Windows 2000 Professional	
	Microsoft Service Pack 6 for Windows NT 4.0	
	Microsoft Service Pack 2 for Windows 2000 Professional	
	Compaq Restore CD	
	Compaq Management Agents	
	Compaq PC Diagnostics via the Web	
	ROM-based Setup	
	Diagnostics for Windows 2000 and Windows NT	
	Microsoft Internet Explorer	
	System Software Manager via the Web	
	Altiris eXpress	

Standard Features - Pre-configured Models

Intelligent Manageability	Asset Control Alert on LAN (AoL) hardware ready Wake on LAN (WoL) Fault Management Lite Console Security Management Pre-Failure Warranty (processors, hard drives and memory) **Remote Management** Remote Wakeup via Magic Packet Support Remote ROM Flash Remote Security Remote Shut Down **Bios Features** Advanced Configuration and Power Interface (ACPI) 1.0b Advanced Power Management (APM) 1.2 Desktop Management Interface (DMI) 2.1 System Management (SM) Bios 2.3
Security	Diskette write and boot control Flash ROM lock Keyboard password Network server mode Parallel interface control Power-on password Serial interface control Setup password Cable lock provision
Power Supply	250-Watt Power Supply (PFC)
Service and Support	Protected by Compaq Services including a three-year, limited warranty with three-year parts coverage, three year, on-site service, and three-year labour; 7 x 24 hardware technical phone support and on-line support through the Internet; Pre-Failure Warranty coverage of hard drives, memory, and processors. Note: Certain restrictions and exclusions apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ.

Standard Features - Pre-configured Models

W4C/2.0/18S/512S/Xd	**Processor**	Intel Pentium 4 2.0-GHz
470022-960 English *470022-966 French* *and graphics option*	**Cache Memory**	256-KB integrated L2
(special order global SKU)	**Memory**	512-MB ECC PC133 SDRAM
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18.2-GB Ultra160 SCSI 10,000rpm
	Graphics	Choice of graphics option: Matrox G200 Quad MMS with analog cables (159513-B21) Matrox G200 Quad MMS with DVI cables (179597-B21) NVIDIA® Quadro2 EX (250066-B21) NVIDIA® Quadro2 MXR (221412-B21) NVIDIA® Quadro2 Pro (225339-B21) Matrox Millennium G450 (AGP) (202389-B21) Matrox Millennium G550 (AGP) DH AGP VGA (250227-B21) DVI Cables for G550 VGA (251435-B21)
	Audio	Integrated AC97 audio with internal speaker
	OS	Windows 2000 Professional/Windows NT Workstation 4.0 (dual install)

W4C/1.7/18S/512S/EXc	**Processor**	Intel Pentium 4 1.7-GHz
470022-963 English	**Cache Memory**	256-KB integrated L2
470023-052 French	**Memory**	512-MB ECC PC133 SDRAM
	Optical Drive	48X Max CD-ROM Drive
	Hard Drive	18.2-GB Ultra160 SCSI 10,000 rpm
	Graphics	NVIDIA® Quadro2 EX
	Audio	Integrated AC97 audio with internal speaker
	OS	Windows 2000 Professional/Windows NT Workstation 4.0 (dual install)

Standard Features - Pre-configured Models

W4C/1.7/18S/512S/Xd	**Processor**	Intel Pentium 4 1.7-GHz
470023-922 English	**Cache Memory**	256-KB integrated L2
470023-923 French	**Memory**	512-MB ECC PC133 SDRAM
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	18.2-GB Ultra160 SCSI 10,000 rpm
	Graphics	Choice of graphics option: Matrox G200 Quad MMS with analog cables (159513-B21) Matrox G200 Quad MMS with DVI cables (179597-B21) NVIDIA® Quadro2 EX (250066-B21) NVIDIA® Quadro2 MXR (221412-B21) NVIDIA® Quadro2 Pro (225339-B21) Matrox Millennium G450 (AGP) (202389-B21) Matrox Millennium G550 (AGP) DH AGP VGA (250227-B21) DVI Cables for G550 VGA (251435-B21)
	Audio	Integrated AC97 audio with internal speaker
	OS	Windows 2000 Professional/Windows NT Workstation 4.0 (dual install)

W4C/1.5/40A/256S/Xc	**Processor**	Intel Pentium 4 1.5-GHz
470022-961 English	**Cache Memory**	256-KB integrated L2
470023-007 French	**Memory**	256-MB ECC PC133 SDRAM
(special order global SKU)	**Optical Drive**	48X Max CD-ROM Drive
	Hard Drive	40-GB Ultra ATA/100 7200 rpm
	Graphics	Choice of graphics option: Matrox G200 Quad MMS with analog cables (159513-B21) Matrox G200 Quad MMS with DVI cables (179597-B21) NVIDIA® Quadro2 EX (250066-B21) NVIDIA® Quadro2 MXR (221412-B21) NVIDIA® Quadro2 Pro (225339-B21) Matrox Millennium G450 (AGP) (202389-B21) Matrox Millennium G550 (AGP) DH AGP VGA (250227-B21) DVI Cables for G550 VGA (251435-B21)
	Audio	Integrated AC97 audio with internal speaker
	OS	Windows 2000 Professional/Windows NT Workstation 4.0 (dual install)

Options

Memory (SDRAM)	512-MB Memory Module (PC133 ECC SDRAM)	254873-B21
	256-MB Memory Module (PC133 ECC SDRAM)	254872-B21
	128-MB Memory Module (PC133 ECC SDRAM)	254871-B21
	Note: Do not mix ECC and non-ECC memory.	
Monitors	TFT8030 Flat Panel Colour (18-inch, Carbon/Silver)	234362-001
	TFT5030 Flat Panel Colour (15-inch, Carbon/Silver)	228134-001
	TFT5015 Flat Panel Colour (15-inch, Multimedia)	234046-001
	TFT5015 Flat Panel Colour (15-inch, Carbon/Silver)	234044-001
	TFT5015 Flat Panel Colour (15-inch, Opal)	234043-001
	P1220 CRT (22-inch, Carbon/Silver)	244374-001230538-001
	P920 CRT (19-inch, Carbon/Silver)	244375-001230535-001
	S920 CRT (19-inch, Carbon/Silver)	240326-001
	P720 CRT (17-inch, Carbon/Silver)	244373-001
	V720 CRT (17-inch, Carbon/Silver)	232944-001
	S720 CRT (17-inch, Carbon/Silver)	239287-001
	S710 CRT (17-inch, Carbon)	154499-002
	V570 CRT (15-inch, Carbon/Silver)	228113-xxx
	Note: AssetControl monitor. AssetControl features are accessible with Compaq Workstations featuring Intelligent Manageability.	
Graphics	Matrox G200 Quad Multi-monitor Series with cables for analog output (PCI)	159513-B21
	Matrox G200 Quad Multi-monitor Series with cables for DVI output (PCI)	179597-B21
	Matrox G200 Quad MMS DVI Upgrade Cable Kit (for option kit 159513-B21)	170840-B21
	Matrox Millennium G450 (AGP)	202389-B21
	Matrox Millennium G550 (AGP) DH AGP VGA	250227-B21
	DVI Cables for G550 VGA	251435-B21
	NVIDIA® Quadro2 EX (AGP) (low profile)	250066-B21
	NVIDIA® Quadro2 MXR (AGP)	221412-B21
	NVIDIA® Quadro2 Pro (AGP)	225339-B21
Diskette Drives	250-MB ATAPI ZIP	294416-B22
	250-MB ATAPI ZIP Media 3-Pack	217896-B21
Tape Drives	TR5 10/20 GB	294293-B22
	33/66 GB VXA-1 SCSI Tape Drive (Carbon)	237108-B22
	33/66 GB VXA-1 IDE Tape Drive (Carbon)	237109-B22
	33/66 GB VXA-1 Media (2-Pack)	237111-B21
	VXA-1 Cleaning Cartridge	237110-B21

Options

Hard Drives	***Ultra3 (Ultra160) SCSI Drives***	
	72-GB Ultra160 SCSI 10,000 rpm (1.0")	250023-B21
	36.4-GB Ultra160 SCSI 10,000 rpm	191189-B21
	18.2-GB Ultra160 SCSI 15,000 rpm	191188-B21
	18.2-GB Ultra160 SCSI 10,000 rpm	159764-B21
	Ultra ATA Drives	
	120-GB Ultra ATA 7200 rpm Quiet Seek and Quiet Idle	250021-B21
	80-GB Ultra ATA 7200 rpm Quiet Seek and Quiet Idle	250020-B21
	60-GB Ultra ATA 7200 rpm Quiet Seek and Quiet Idle	230253-B21
	40-GB Ultra ATA 7200 rpm Quiet Seek and Quiet Idle	201066-B21
	20-GB Ultra ATA 7200 rpm Quiet Seek and Quiet Idle	251974-B21
Storage Controllers	Adaptec 29160N Ultra160 Single Channel SCSI Controller	157810-B21
	Adaptec 2100S Ultra 160 (U3) Single Channel RAID Controller	192842-B21
Biometrics	USB Biometric ID Device	240238-B21
Multimedia	48X CD-ROM	187217-B22
	16X/40X DVD-ROM	237495-B22
	16X/10X/4X CD-RW Drive	240598-B22
	4.7-GB DVD-RAM Drive	294415-B22
	4.7-GB DVD RAM (Single Sided) Media Kit	211082-B21
	Speakers (NA)	246637-001
	Speakers (EMEA)	246637-022
	Speakers (APD)	246637-031
	1394 DVE Adobe kit	229966-B21
Communications	Intel PRO/100+ Management Adapter w/ IPSecurity	212953-B21
	Intel PRO/100+ Management Adapter w/ IPSecurity (20 pack)	212954-B21
	Compaq NC7131 Gigabit Server Adapter PCI, 64/66 10/100/1000-T	158575-B21
	Compaq WL215 Wireless USB	191810-B21
	V90 56K PCI WIN Modem	225745-xx1
Uninterruptible Power Systems	Compaq Tower UPS Model T1500 (low voltage)	242688-003
	Compaq Tower UPS Model T1000 (low voltage)	242688-001
	Compaq Tower UPS Model T700 (low voltage)	295372-B21

Options

Other	Compaq Scroll Mouse	170299-B22
	3 Button Mouse	269192-B23
	External SCSI Adapter 68-/50-Pin	270187-B21
	Easy Access Keyboard	202109-xx8
	Sliding Shelf Kit for Rack	332564-B21
	Spaceball 4000 3D Motion Controller	112138-B22
	Compaq Basic Smart Card Keyboard (L2 Security)	115506-xx8
	Solenoid Hood lock/sensor	252076-B21
Support Software CD	Single CD-ROM (current month)	272505-001

Memory

Compaq Evo Workstation W4000 (128 MB)

STANDARD MEMORY

128-MB of PC133 ECC SDRAM is standard.

STANDARD MEMORY PLUS OPTIONAL MEMORY

Support for up to 1152 MB of PC133 ECC SDRAM is available with the installation of optional Memory Kits.

STANDARD MEMORY REPLACED WITH OPTIONAL MEMORY

Support for up to 1.5 GB of PC133 ECC SDRAM is available with the removal of the standard 128-MB PC133 ECC SDRAM module and the installation of optional Memory Kits.

Following are memory options available from Compaq:

- 512-MB Memory Kit (PC133 ECC SDRAM) 254873-B21
- 256-MB Memory Kit (PC133 ECC SDRAM) 254872-B21
- 128-MB Memory Kit (PC133 ECC SDRAM) 254871-B21

Memory

Compaq Evo Workstation W4000 (256 MB)

STANDARD MEMORY

256-MB of PC133 ECC SDRAM is standard.

STANDARD MEMORY PLUS OPTIONAL MEMORY

Support for up to 1280 MB of PC133 ECC SDRAM is available with the installation of optional Memory Kits

STANDARD MEMORY REPLACED WITH OPTIONAL MEMORY

Support for up to 1.5 GB of PC133 ECC SDRAM is available with the removal of the standard 256-MB PC133 ECC SDRAM module and the installation of optional Memory Kits.

Following are memory options available from Compaq:

- 512-MB Memory Kit (PC133 ECC SDRAM) 254873-B21
- 256-MB Memory Kit (PC133 ECC SDRAM) 254872-B21
- 128-MB Memory Kit (PC133 ECC SDRAM) 254871-B21

Memory

Compaq Evo Workstation W4000 (512 MB)

STANDARD MEMORY

512 MB of PC133 ECC SDRAM is standard.

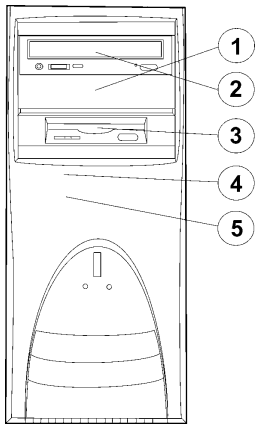
STANDARD MEMORY PLUS OPTIONAL MEMORY

Support for up to 1.5 GB of PC133 ECC SDRAM.

Following are memory options available from Compaq:

- 512-MB Memory Kit (PC133 ECC SDRAM) 254873-B21
- 256-MB Memory Kit (PC133 ECC SDRAM) 254872-B21
- 128-MB Memory Kit (PC133 ECC SDRAM) 254871-B21

Storage



DRIVE SUPPORT

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	1, 2, 3	Integrated
CD-ROM Drive	Up to 1	1, 2	Integrated EIDE
250-MB ATAPI ZIP Drive	Up to 1	1, 2	Integrated EIDE
DVD-ROM Drive	Up to 1	1, 2	Integrated EIDE
CD-RW Drive	Up to 1	1, 2	Integrated EIDE
4.7-GB DVD-RAM Drive	Up to 1	1, 2	Integrated EIDE
Hard Drives			
Ultra3 (Ultra 160) SCSI Drives			
1-inch	Up to 3	1, 2, 3, 4, 5	Ultra160 SCSI Controller (PCI)
72-GB 10,000 rpm			
36.4-GB 10,000 rpm			
18.2-GB 15,000 rpm			
18.2-GB 10,000 rpm			
Ultra ATA Drives			
1-inch	Up to 3	1, 2, 3, 4, 5	Integrated EIDE
60-GB 7200 rpm			
40-GB 7200 rpm			
20-GB 7200 rpm			
Maximum Storage Capacity			
Internal	216 GB (assumes two removable media drives installed)		

Technical Specifications

System Unit	**Tower Dimensions** (HxWxD)	17.65 x 6.6 x 17.61 in/44.83 x 16.76 x 44.73 cm	
	Weight (standard configuration)	26 lbs/12 kg	
	Power Supply	Operating Voltage Range	90 VAC to 264 VAC
		Rated Voltage Range	100 VAC to 120 VAC; 200 VAC to 240 VAC
		Rated Line Frequency	47 Hz to 63 Hz
		Rated Input Current	4.5A @ 115 VAC; 3.0A @ 230 VAC
		Maximum Rated Power	250-Watt output;
		Physical Dimensions	5.15 x 3.85 x 6.05 in/13 x 9.8 x 15.4 cm
		Weight	4.5 lbs/2.05 kg
	Temperature	Operating	50° to 95°F/10° to 35°C
	(Values are subject to change)	Non-operating	4° to 140°F/–15° to 60°C
	Humidity (non-condensing)	Operating	20% to 80%
	(Values are subject to change)	Non-operating	10% to 90%
	Maximum Altitude	Operating	10,000 ft/3,048 m
	(non-pressurized)	Non-operating	30,000 ft/9,144 m
Compaq Easy Access Keyboard	**Dimensions** (HxWxD)	18.3 x 6.3 x 1.4 in/46.5 x 16.0 x 3.6 mm	
	Weight	Approximately 2 lbs/0.9 kg	
	Electrical	Operating Voltage	+5VDC ± 5%
		Power Consumption	50 mA maximum (with 3 LEDs on)
		System Interface	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC99	Functionally compliant
	Mechanical	Languages	30+ available
		Keycaps	Low-profile design
		Switch Actuation	55 g nominal peak force with tactile feedback
		Switch Life	20 million keystrokes (using Hasco modified tester)
		Switch Type	Contamination resistant membrane
		Key Leveling Mechanism	For all double wide and greater length keys
		Cable Length	6 ft/1.8 m
		PC98-99	Mechanically compliant
		Acoustics	50 dBA maximum sound pressure level
	Environmental	Operating Temperature	50° to 122° F/10° to 50° C
		Non-operating Temperature	–22° to 140° F/–30° to 60° C
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration

Technical Specifications

1.44-MB Diskette Drive	**Diskette Size**	3.5 in	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low)	1.44 MB/720 KB	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	94/173 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	

Compaq 3-Button Mouse	**Dimensions/Weight**	Height	1.42 in/3.6 cm
		Length	4.17 in/10.7 cm
		Width	2.87 in/7.4 cm
		Weight	5.20 oz/150 g
	Environmental	Operating Temperature	32° to 104° F/0°C to 40° C
		Non-operating Temperature	–4° to 140° F/–20° to 60°C
		Operating Humidity	10% to 90% (non condensing at ambient)
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s Maximum
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Switch Type	Micro-switches
		Tracking Mechanism Life	155 miles/250 km at average speed of 10 in/s
		Cable Length	6 ft/1.8 m
		PC98-99	Mechanically compliant
	Regulatory Approvals	Compliant	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick

Technical Specifications

Ultra160 SCSI Hard Drives	**72 GB**	**Capacity**	72,000 MB	
	250023-B21	**Height**	1 in/25.4mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra160 SCSI	
		Synchronous Transfer Rate (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.6 ms
			Average	5.2 ms
			Full-Stroke	12 ms
			Rotational Speed	10,000 rpm
		Logical Blocks	142,264,000	
		Operating Temperature	50° to 95°F/10° to 35°C	
	36.4 GB	**Capacity**	36,400 MB	
	191189-B21	**Height**	1.0 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra160 SCSI	
		Synchronous Transfer Rate (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.6 ms
			Average	4.7 ms
			Full-Stroke	12 ms
			Rotational Speed	10,000 rpm
		Logical Blocks	71,132,000	
		Operating Temperature	50° to 95°F/10° to 35°C	
	18.2 GB	**Capacity**	18,209 MB	
	191188-B21	**Height**	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra160 SCSI	
		Synchronous Transfer Rate (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.8 ms
			Average	4.1 ms
			Full-Stroke	7.7 ms
			Rotational Speed	15,000 rpm
		Logical Blocks	35,566,000	
		Operating Temperature	50° to 95°F/10° to 35°C	

Technical Specifications

Ultra160 SCSI Hard Drives *(continued)*	**18.2 GB**	**Capacity**	18,209 MB	
	159764-B21	**Height**	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra160 SCSI	
		Synchronous Transfer Rate (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.6 ms
			Average	4.7 ms
			Full-Stroke	12 ms
			Rotational Speed	10,000 rpm
		Logical Blocks	35,566,000	
		Operating Temperature	50° to 95°F/10° to 35°C	
Ultra ATA Hard Drives	**60 GB**	**Capacity**	60,000 MB	
	230253-B21	**Height**	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra ATA/100	
		Synchronous Transfer Rate (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	1.2 ms (2.7 ms quiet seek)
			Average	8 ms (10.1 ms quiet seek)
			Full-Stroke	18.0 ms (21.1 ms quiet seek)
			Rotational Speed	7200 rpm
		Logical Blocks	117,231,408	
		Operating Temperature	41° to 131°F/5° to 55°C	
	40 GB	**Capacity**	40,000 MB	
	201066-B21	**Height**	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra ATA/100	
		Synchronous Transfer Rate (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	1.2 ms (2.7 ms quiet seek)
			Average	8 ms (10.1 ms quiet seek)
			Full-Stroke	18.0 ms (21.1 ms quiet seek)
			Rotational Speed	7200 rpm
		Logical Blocks	78,165,360	
		Operating Temperature	41° to 131°F/5° to 55°C	
	20 GB	**Capacity**	20,000 MB	
	251974-B21	**Height**	1 in/25.4 mm	
		Width	3.5 in/88.9 mm	
		Interface	Ultra ATA/100	
		Synchronous Transfer Rate (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	1.2 ms (2.7 ms quiet seek)
			Average	8 ms (10.1 ms quiet seek)
			Full-Stroke	18.0 ms (21.1 ms quiet seek)
			Rotational Speed	7200 rpm
		Logical Blocks	39,102,336	
		Operating Temperature	41° to 131°F/5° to 55°C	

Technical Specifications

16X/10X/40X CD-RW Drive

Interface	ATAPI IDE	
Media formats read	Any industry standard compact disc media	
Media formats written	CD-R and CD-RW	
Media capacity	650 MB	
Write methods	Disc-at-once, track-at-once, session-at-once, fixed packet, and variable packet	
Recording/playing time	More than 74 minutes	
Data transfer rates	Sustained	CD-R write—2,400 Kbps (16X) CD-RW write (1-4X media) —1,500 Kbps (4X CD-RW write (4-10X media) —1,500 Kbps (10X) CD-RW read—1,500 Kbps (10X) Digital audio extraction (minimum) —1,500 Kbps (10X)
	Variable	CD-ROM, CD-R read—1,500 to 6,000 Kbps (10X to 40X)
Data transfer modes	ATA PIO mode 4—16.7 Mbps ATA multi-word DMA mode 2—16.7 Mbps ATA UltraDMA mode 0—16.7 Mbps (mandatory and default setting) ATA UltraDMA mode 1—24 Mbps (optional); mode 2—33 Mbps (optional)	
Media formats read	CD-audio, CD-ROM (modes 1 and 2), CD-ROM XA (mode 2, forms 1 and 2), single- or multi-session photo CD, CD-I, video CD, CD-text	
Access times	Random	<120 ms typical
	Full stroke	<200 ms typical
Rotational speed	17X—40X CAV	8,350 RPM, constant
	16X CLV	3,424—7,952 RPM
	10X CLV	2,140—4,970 RPM
	8X CLV	1,712—3,976 RPM
	4X CLV	856—1,988 RPM
Start-up time	Single	<7 seconds typical
	Multi-session	<30 seconds typical
Stop time	<4 seconds	
Block size	Mode 1—2,048 / 2,352 bytes Mode 2, Form 1—2,048 / 2,328 / 2,336 / 2,340 / 2,352 bytes Mode 2, Form 2—2,328 / 2,336 / 2,340 / 2,352 bytes CD-DA—2,352 / 2,368 bytes	
Thickness	1.2 mm	
Dimensions	Fits in a standard 5.25-inch drive bay	
Disc diametre	120 mm or 80 mm	
Track pitch	1.6 µm	
Disc loading mechanism	Half-height, tray load	
Operating conditions	Temperature	41° to 113° F (5° to 45° C) operating; -4° to 140° F
	Humidity	10% to 80%
Mounting orientation	Horizontal or vertical	
Weight	2.6 pounds (1.2 kg)	
Approvals/ environmental	UL 94 and 1950, CSA, CE, FDA, FCC	
Operating systems supported	Microsoft Windows 98, Microsoft Windows NT 4.0, Microsoft Windows 2000	
Kit contents	16X CD-RW media, CD-RW high speed media, Roxio™ EasyCD Creator version 4.05, Dantz Retrospect Express version 5.5 for CD-RW, IDE and audio cable	

Technical Specifications

48X CD-ROM Drive	**Disk**	Applicable Disk	CD-ROM (Mode 1 and 2), CD-R/W, CD-R Photo CD (Single and Multi-session), Mixed Mode (Audio and Data combined), CDI Ready, CD-XA Ready, CD TEXT, CD EXTRA
		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
		Rotational Speed	8750 maximum
		Diametre	4.7 in, 3.15 in/12 cm, 8 cm
		Centre Hole	0.6 in/15 mm diametre
		Thickness	0.05 in/1.2 mm
		Track Pitch	1.6 µm
	Block Size	Mode 1	2,048 bytes
		Mode 2	2,340, 2,336 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE	
	Access Times (typical)	Random	< 100 ms
		Full-Stroke	< 150 ms
	Audio Output Level	Line-Out	0.7 VRMS
	Data Transfer Rate	Sustained	150 KB/s (1X, using audio disc)
		Variable	3,000 to 7,200 KB/s
	Cache Buffer	128 KB minimum	
	Start-up Time (typical)	< 7 s	
	Stop Time	< 4 s	
	Operating Conditions	Temperature	41° to 113°F/5° to 45°C
		Humidity	10% to 80%
	Dimensions	(HxWxD, maximum)	1.7 x 5.9 x 8.19 in/4.29 x 15 x 20.8 cm
		Weight	2.65 lbs/1.2 kg

Technical Specifications

16X/40X DVD-ROM Drive with RAM Read	**Bus**	Ultra DMA 33	
	Data Transfer Rate (1 KB = 1024 bytes)	Sustained	DVD = 8.1 MB/s to 21.6 MB/s
			CD-ROM = 2.55 KB/s to- 6.00 KB/s
	Disk Rotation Technology		DVD: CAV -Constant Angular Velocity
			CD: CAV - Constant Angular Velocity
	Access Time (ms)	Random	DVD = <100 ms; CDROM = < 80 ms
		Full Stroke Seek	DVD = <240 ms; CDROM = <160 ms
	Cache Buffer Standard / Max	512 KB	
	ATAPI Interface	ATAPI	
	Disk Formats Read	DVD-ROM	Yes
		DVD-Video	Yes
		DVD-R	Yes
		DVD-RW	Yes
		DVD-RAM	Yes
		Photo-CD/Multi-session	Yes
		CD-ROM	Yes
		CD TEXT	Yes
		Audio CD	Yes
		CD-I	Yes
		CD-RW	Yes
		CD-R	Yes
		CD-DA	Yes
		Video CD	Yes
		CD EXTRA	Yes
		CD-ROM XA	Yes
		MPEG	Yes
		MPC Level 2	Yes
	Disk Formats Written	None	
	Disk	Capacity	CD = 650 MB
			DVD: 4.7 GB, 8.5 GB, 9.4 GB
		Block Size	Mode 0 2352 (bytes)
			Mode 1 2352, 2340, 2336, 2048 (bytes)
			Mode 2 2352, 2340, 2336, 2048 (bytes)
			DVD – 2048 (bytes)
		Diametre	12 cm, 8 cm
		Thickness	1.2 mm (CD-ROM) 1.2 mm (DVD)

Technical Specifications

16X/40 DVD-ROM Drive with RAM Read *(continued)*	**Audio Output Level**	Line Out	0.7± 0.1 Vrms
		Headphones	0.45 ± 0.2 Vrms
	Operating Conditions	Temperature	41° to 113°F/5° to 45°C
		Humidity	5% to 85% relative humidity
	Dimensions (HxWxD)	Inches	1.67 x 5.83 x 8.18
		Centimetres	4.23 x 14.8 x 20.75
	Weight	Pounds	2.22
		Kilograms	1
	Agency Approvals / Environmentals	UL, CSA, TUV, FDA, FCC, CE, EMI	
	OS Support	Windows 98/98SE, Windows ME, Windows 2000, and Windows NT 4.0 (for data applications only)	
	MPEG Video playback compatibility	Please refer to the platform for support	
	RPC2 (Regional Protection Control)	Yes	
	Minimum CPU Supported	Pentium II 400 MHz or Celeron 466 MHz	
	Mounting Orientation	Operates in horizontal or vertical position.	
	Kit Contents	DVD-ROM Drive, MPEG playback software, ReadDVD™ software, IDE Cable, audio cable, installation instructions, and warranty card.	

Technical Specifications

Compaq *Premier•Sound* featuring AC'97 Audio	**Type**	Embedded AC'97 2.1 Codec	
	Sound Quality	16-Bit Stereo Full-Duplex (CD Quality)	
	Sampling	Variable 7 kHz to 48 kHz	
	Audio Compression/Decompression	ESPCM and ADPCM compression	
	Full Scale Input Voltage (RMS)	Microphone Input Line Input	100 mVolts 2.2 Volts
	Full Scale Output Voltage (RMS)	Line Output	1.4 Volts
	Impedance (nominal)	Line Output Line Input	800 ohms (typical) 10 Kohms (typical)
	Playback (PC-D-A)	Dynamic Range Total Harmonic Distortion + Noise Frequency Response (–3 dB)	–91 dB (typical) –69 dB (typical) 20 Hz to 20 kHz
	Line Output Crosstalk (10 kHz)	–74 dB	
	Headphone Maximum Output (1 kHz)	60 mWrms into 32 ohms (THD+N < 1%)	
	Internal Power Amplifier Rating	Nominal: 1.5 Watts RMS @ 8 ohms Maximum: 5 Watts RMS @ 8 ohms	
	Speaker	Frequency Response Equalizer Design	200 Hz to 15 kHz 5 stages of fixed equalization High-performance, infinite baffle loudspeaker
	Connectors	Line-in, line-out, microphone-in, headphone-out	
	Operating System Driver Support	Windows NT 4.0, Windows 98, Windows 2000	

Technical Specifications

Compaq Integrated Intel® PRO/100 VM Network Connection	**Manufacturer**	Intel®	
	Interface	Intel SingleDriver™ technology (10/100-Mbps support)	
	Connectors	RJ-45	
	Expansion Bus Architecture	PCI 2.2	
	Configuration	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s
			10Base-T (Full-Duplex) 20 Mb/s
			100Base-TX (Half-Duplex) 100 Mb/s
			100Base-TX (Full-Duplex) 200 Mb/s
		Data Interface	PCI, 32-bit bus mastering
		I/O Address	Integrated connectivity with Intel I/O Controller Hub (ICH2)-based platforms
	OS Driver support	Microsoft Windows NT 3.51 and 4.0, Microsoft Windows 95 and 98, Microsoft Windows 2000, Microsoft Windows Me, Novell® NetWare® 3.11, 3.12, and 4.1x, 5 Server, Sun Solaris™, SCO UnixWare OpenDesktop and OpenServer	
	Software support	Instrumentation support for CIM/WBEM SNMP, DMI, PXE 2.0, Intel PROSet utility for installation and configuration, Alert on LAN Software Developer Kit and same code	
	Remote wakeup	PME through PCI 2.2, no cable required	
	Boot PROM support	Yes, Intel PRO/100 Boot Agent (PXE 2.0, RPL)	
	Special Features	Digital adaptive equalization control, link status interrupt capability, boundary scan support, 3-port LED support (speed, link, activity), 10BASE-T auto polarity correction, diagnostic loopback mode, 1:1 transmit transformer ratio support, automatic detection of unplugged mode, remote monitoring (alerting)	
	Proactive Alert technology	Alert on LAN (transmit functionality only)—requires Management Console software such as HP OpenView and Altiris, alert utilities for the management console, proxy client software, client configuration software	
	F12 BIOS Support	Yes	

Technical Specifications

Compaq Integrated Intel® PRO/100 VM Network Connection *(continued)*	**Environmental Requirements**	Operating temperature	32° to 131° F (0° to 55° C)
		Operating humidity (non-condensing)	85% at 131° F (55° C)
		Operating Altitude	10,000 feet (3,048 metres)
		Non-Operating temperature	–40° to 158° F (–40° to +70° C)
		Altitude	5,000 feet (15,240 metres)
	Power	300 mW typical in active transmit mode; reduced power in unplugged mode (<50 mW); 3.3 V device	
	Power management	ACPI 1.0	
	Flash package	48-pin Shrink Small Outline Package (SSOP)	
	Network management	PCI 2.2	
	LED indicators	Three-port support (speed, link, and activity)	
	Standards compliance	IEEE 802.2, IEEE 802.3 and IEEE 802.3u, (100-Mbps ethernet), SCO UnixWare OpenDesktop and OpenServer, PC'99	

Technical Specifications

NVIDIA® Quadro2 Pro Graphics Controller

3D/2D Controller	Integrated Quadero2 Pro 2D/3D 128-bit graphics processor unit (GPU)
VGA Controller	Integrated into the Quadro2 Pro GPU
Bus type	AGP 4X
RAMDAC	350 MHz
Memory type	400 MHz 4Mx16DDr-5ns
Memory amount	64 MB
Memory Speed	400 MHz (DDR)
Controller clock speed	250 MHz
Colour planes	32-bit colour buffer
Overlay planes	1 16-bit Video overlay plane, software emulation for OpenGL overlay planes
Stencil planes	8-bit stencil buffer
Alpha planes	8-bit alpha buffer
Z-buffer	24-bit
Total bits/pixel	64
Maximum vertical refresh rate	240 Hz
Maximum pixel clock	350 MHz
Multi-display support	No
Operating systems	Microsoft Windows 2000, Windows NT 4.0 available from Compaq

Resolution	Maximum Colours Supported	Maximum Refresh Rate	Memory Dedicated to Texture Support
640 x 480	16.7 M	240 Hz	60.4 MB
800 x 600	16.7 M	240 Hz	58.4 MB
1024 x 768	16.7 M	240 Hz	54.8 MB
1152 x 864	16.7 M	200 Hz	52.3 MB
1280 x 1024	16.7 M	150 Hz	48.6 MB
1600 x 1000	64 K	120 Hz	54.6 MB
1600 x 1000	16.7 M	120 Hz	45.3 MB
1600 x 1200	64 K	100 Hz	52.8 MB
1600 x 1200	16.7 M	100 Hz	41.5 MB
1600 x 1280	64 K	100 Hz	52 MB
1600 x 1280	16.7 M	100 Hz	40 MB
1920 x 1080	64 K	85 Hz	51.9 MB
1920 x 1080	16.7 M	85 Hz	39.7 MB
1920 x 1200	64 K	85 Hz	50.5 MB
1920 x 1200	16.7 M	85 Hz	37 MB

Technical Specifications

Matrox Millennium G550 AGP Graphics Controller	**Form factor**		Low profile (LP) board with ATX bracket attached (kit also includes a Small Form Factor (SFF) bracket
	Bus type		AGP 4X, AGP 2X, and AGP 1X
	Standard memory		32-MB, high-speed DDR
	DAC speed		360-MHz RAMDAC; secondary 230-MHz RAMDAC
	Data path		64-bit DDR external bus to frame buffer memory/256-bit internal
	Internal bus width		256-bit DualBus
	Memory interface		64-bit DDR Memory
	Frame buffer		32 MB
	Operating systems supported		Microsoft Windows XP Professional and Home Edition, Microsoft Windows 2000, Microsoft Me, Microsoft Windows 95/98, Microsoft Windows NT 4.0, Linux
	Two integrated RAMDACs		Yes
	Optional software bundles (not included)		Matrox Virtual Presenter for Microsoft PowerPoint; Digimask™ System, HeadFone™ by LipSinc; The Matrox Software DVD Player; eDualHead browser enhancements (PageWrap, PageLog, and PageJump); Matrox PowerDesk
	3-D engine acceleration		Matrox HeadCasting* engine, two dual-textured 3-D pixels/clock for fast 3-D game play, dual pixel pipelines with dual texturing units per pipeline, floating point 3-D setup engine with dynamically re-allocatable resources; Microsoft DirectX Environment-Mapped Bump Mapping; Vibrant Colour Quality rendering; bilinear, 8-sample-per-pixel trilinear, and anisotropic filtering; Microsoft DirectX and OpenGL® alpha blending modes; Z-buffer support
	3-D features	Single cycle multi-texturing	Yes
		nvironment-mapped bump mapping	Yes
		Internal rendering	32-bit
		Source textures	Up to 32-bit
		Maximum texture size	2048 x 2048
		32-bit colour output	Yes
		32-bit independent Z-buffer	Yes
		Stencil buffering	Yes
		AGP texturing	Yes
		Trilinear filtering	Yes
		Microsoft DirectX support	Yes
		OpenGL support	Yes, through Matrox
	DualHead 3-D display features		HeadCasting, Microsoft DirectX compliant, dual texturing units per pixel pipeline, two pixel pipelines, single-cycle multi-texturing, environment-mapped bump mapping, 32-bit internal rendering precision, up to 32-bit source textures, 32-bit colour output, bilinear, trilinear and anisotropic 3-D filtering, 32-bit independent Z-buffer, OpenGL support
	Other 3-D features		Alpha blending, fogging, specular highlighting, environment mapping, stencil buffering, triple buffering, AGP texturing
	Other		Texture mapping support; true colour RGB, flat, and Gouraud shading; Direct3-D support; anisotropic filter; perspective-correct texture mapping; specular highlighting (any colour); hardware dithering (including dithering of LUT textures); sort-dependent antialiasing; vertex and table fogging; dual texture mapping; Plug-and-Play; 0.18-micron technology (lower heat/power consumption); high-quality DVD playback with DVDMax; colour space conversion; QuickDraw supported DCI and Microsoft DirectX and OpenGL blend modes; Microsoft DirectDraw support; support for picture-in-picture and multiple video windows; Unique Motion Video Rendering support

Matrox Millennium G550 AGP Graphics Controller *(continued)*

DualHead configurations	VGA monitor/analog flat panel + VGA monitor/analog flat panel VGA monitor/analog flat panel + television Digital flat panel + VGA monitor/analog flat panel Digital flat panel + television
DualHead 2-D display features	DualHead Multi-Display support; DualHead Browser Enhancement Suite, DualHead DVDMax, DualHead Zoom, DualHead Clone, DVDMax, DualHead MultiDesk, DualHead TV-out, DualHead Snapshot, Dual DVI support, ; True Multi-Display support with Microsoft Windows 2000
DualHead display technology chip specifications	Multiple independent displays with a single AGP card: analog flat panel (RGB monitor)/analog flat panel (RGB monitor); digital flat panel/digital flat panel

Note: System recommendations for HeadCasting and DVD—450-MHz or higher computer; 128 MB RAM; 56-K or higher modem with minimum 40-K connection, microphone, and DVD-ROM; Internet Explorer 5.5 or higher, Microsoft PowerPoint 2000 or Microsoft PowerPoint XP (for Matrox Virtual Presenter)

Resolutions Supported	Maximum Colours Supported	Refresh Rates
640 x 480	16 million	200 Hz vertical, 130 kHz horizontal
800 x 600	16 million	200 Hz vertical, 130 kHz horizontal
1024 x 768	16 million	160 Hz vertical, 130 kHz horizontal
1152 x 864	16 million	140 Hz vertical, 130 kHz horizontal
1280 x 1024	16 million	120 Hz vertical, 130 kHz horizontal
1600 x 1200	16 million	100 Hz vertical, 130 kHz horizontal
1800 x 1440	16 million	90 Hz vertical, 120kHz horizontal
1920 x 1440	16 million	85 Hz vertical, 115 kHz horizontal
2048 x 1536	16 million	85 Hz vertical, 110 kHz horizontal

Secondary Resolutions Supported	Maximum Colour Depths (bpp)	Refresh Rates
640 x 480	16 million	200 Hz vertical, 130 kHz horizontal
800 x 600	16 million	200 Hz vertical, 130 kHz horizontal
1024 x 768	16 million	160 Hz vertical, 130 kHz horizontal
1152 x 864	16 million	140 Hz vertical, 130 kHz horizontal
1280 x 1024	16 million	120 Hz vertical, 130 kHz horizontal
1600 x 1200	16 million	100 Hz vertical, 130 kHz horizontal

Technical Specifications

Matrox Millennium G450 Graphics Controllers

Form Factor	ATX	
Bus Type	AGP 1X, 2X, 4X: PCI rev 2.2 bus specification	
Standard Memory	AGP: 32 MB / PCI: 16 MB	
DAC Speed	360 MHz (secondary DAC: 200 MHz)	
Data Path	64-bit DDR External/256-bit Internal	
Internal Bus Width	256-bit DualBus	
Memory Interface	64-bit DDR Memory	
Frame Buffer	AGP: 32 MB / PCI: 16 MB	
Two Integrated RAMDACS	Yes	
Engine Acceleration	3 ROP bitBLT, line draw, text, colour expansion, basic video colour conversion and scaling, triangle setup engine	
Output	Analog, 2 ports	
OS Support	Microsoft Windows 2000, Windows 98 and Windows NT 4.0 available from Compaq.	
Other	PCI bus mastering, texture mapping support, flat and Gouraud shading, direct 3D support, Anisotropic Filter, perspective texture, specular highlighting, wireframe, dithering, full scene anti-aliasing, vertex fog, dual texture mapping, Plug-and-Play AGP 2X and AGP 4X, 0.18-micron technology (lower heat/power consumption), high-quality DVD playback with full access to Windows, Colour Space Conversion, Quick Draw support, DCI and DirectX video playback, MS DirectDraw support	
3D Features	Single-cycle multi-texturing	Yes
	Environment-Mapped Bump Mapping	Yes
	Internal Rendering	32-bit
	Source Textures	Up to 32-bit
	Maximum Texture Size	2048 x 2048
	Hardware non-power-of- 2 textures	Yes
	32-bit Colour Output	Yes
	32-bit Independent Z-buffer	Yes
	Stencil Buffering	Yes
	AGP Texturing	Yes
	Trilinear Filtering	Yes
	DirectX Support	Yes
	OpenGL Support	Yes
DualHead Display Features	Multi-Display Mode, DVD Max Mode, DualHead Zoom Mode, DualHead Clone Mode, DualHead TV Output Mode, Single Chip Multi-Monitor Support	

Matrox Millennium G450 Graphics Controllers *(continued)*

Supported Modes

This list assumes setup to be DualHead multi-display running Microsoft Windows 98. If using Windows NT 4.0 or Windows 2000 while in multi-display, primary CRT is limited to modes supported by 2nd CRT.

Primary CRT Colour Depths	***Colour Depths (bpp)***	***Refresh Rates***
640 x 480	8, 16, 24, 32	60 Hz, 72 Hz, 75 Hz, 85 Hz
800 x 600	8, 16, 24, 32	60 Hz, 72 Hz, 75 Hz, 85 Hz
1024 x 768	8, 16, 24, 32	60 Hz, 70 Hz, 75 Hz, 85 Hz
1152 x 864	8, 16, 24, 32	75 Hz
1280 x 960	8, 16, 24, 32	60 Hz, 75 Hz, 85 Hz
1280 x 1024	8, 16, 24, 32	60 Hz, 75 Hz, 85 Hz
1600 x 1200	8, 16, 24, 32	60 Hz, 65 Hz, 70 Hz, 75 Hz, 85 Hz (available in single monitor configuration only)
1800 x 1440	8, 16, 24	60 Hz, 72 Hz, 75 Hz, 85 Hz
1856 x 1392	8, 16, 24	60 Hz, 75 Hz, 85 Hz
1920 x 1440	8, 16, 24	60 Hz, 75 Hz, 85 Hz
2048 X 768	8, 16	60 Hz, 75 Hz
Secondary CRT Colour Depths	***Colour Depths (bpp)***	***Refresh Rates***
640 x 480	16, 32	60 Hz, 72 Hz, 75 Hz, 85 Hz
800 x 600	16, 32	60 Hz, 72 Hz, 75 Hz, 85 Hz
1024 x 768	16, 32	60 Hz, 70 Hz, 75 Hz, 85 Hz
1152 x 864	16, 32	75 Hz
1280 x 960	16, 32	60 Hz, 75 Hz, 85 Hz
1280 x 1024	16, 32	60 Hz, 75 Hz, 85 Hz
1600 x 1200	16, 32	60 Hz, 65 Hz, 70 Hz, 75 Hz, 85 Hz

Matrox G200 Quad Multi-Monitor Series (MMS) Graphics Controller

Dimensions (HxW)	4.5x8 in/11.43x20.32 cm		
Refresh Rate (per display)			
Aspect Ratio	**Resolution**	**Vertical**	**Horizontal**
4:3/5:4	640 x 480	60 to 200 Hz	31 to 102 kHz
	800 x 600	60 to 200 Hz	38 to 114 kHz
	1024 x 768	60 to 140 Hz	48 to 113 kHz
	1152 x 864	60 to 120 Hz	54 to 110 kHz
	1280 x 1024	60 to 100 Hz	64 to 107 kHz
	1600 x 1200	60 to 90 Hz	75 to 113 kHz
	1800 x 1440	60 to 70 Hz	89 to 104 kHz
16:9/16:10	856 x 480	60 to 200 Hz	30 to 108 kHz
	1280 x 720	60 to 100 Hz	44 to 76 kHz
	1600 x 1024	60 to 100 Hz	64 to 108 kHz
	1920 x 1080	60 to 80 Hz	70 to 94 kHz
	1920 x 1200	60 to 76 Hz	75 to 95 kHz

With DVI digital flat panel displays, the maximum display resolution is 1280 x 1024.

Maximum refresh rates may not be attainable at the highest display resolutions with 24 or 32-bit colour palettes.

Interface	PCI	
Standard Memory	32-MB SGRAM (8 MB per port)	
DAC Speed	250 MHz	
Data Path	128-bit Internal/64-bit External	
Colour Space Conversion	Yes	
Scaling	Yes	
Quick Draw Support	Yes	
DCI & DirectX Video Playback	Yes	
Direct3D Support	Yes	
Engine Acceleration	3 ROP bitBLT, Line Draw, Text, Colour Expansion, Basic Video Colour Conversion and Scaling, Triangle Setup Engine	
Output	Two output ports, which require 2 adapter cables to connect analog or digital output displays	
	Analog Display Support	2 RGB cables support two DB-15 analog displays per cable
	DVI (Digital Visual Interface) Display Support	DVI cable option kit provides two DVI cables for connecting two DVI compliant displays per cable
	Display options supported	Four analog displays via two RGB cables
		Four DVI displays via two DVI cables
		Two analog displays via one RGB cable and two DVI displays via one DVI cable
Other	PCI bus-mastering, texture mapping support, flat and Gouraud shading, Anisotropic Filter, perspective texture, specular highlighting, dithering, full scene anti-aliasing, Vertex fog	
OS Support	Windows 2000 and Windows NT 4.0	

NVIDIA® Quadro2 MXR Graphics Controller

Dimensions (LxHxW) Approximately 6.5 x 3.8 x 0.6 in/16.51 x 9.65 x 1.52 cm

Resolution	Maximum Colours Supported	Maximum Refresh Rate	Memory Dedicated to Texture Support
640 x 480	16.7 M	240 Hz	28.4 MB
800 x 600	16.7 M	240 Hz	26.4 MB
1024 x 768	16.7 M	200 Hz	22.8 MB
1152 x 864	16.7 M	170 Hz	20.3 MB
1280 x 1024	16.7 M	150 Hz	16.6 MB
1600 x 1000	64 K	120 Hz	22.6 MB
1600 x 1000	16.7 M	120 Hz	13.3 MB
1600 x 1200	64 K	100 Hz	20.8 MB
1600 x 1200	16.7 M	100 Hz	9.5 MB
1600 x 1280	64 K	100 Hz	20 MB
1600 x 1280	16.7 M	100 Hz	8 MB
1920 x 1080	64 K	85 Hz	19.9 MB
1920 x 1080	16.7 M	85 Hz	7.7 MB
1920 x 1200	64 K	85 Hz	18.5 MB
1920 x 1200	16.7 M	85 Hz	5 MB

3D/2D Controller	Integrated Quadro2 MXR 2D/3D 128-bit graphics processor unit (GPU)
VGA Controller	Integrated into the Quadro2 MXR GPU
Bus Type	AGP 2X, 4X Graphics Bus
RAMDAC	350 MHz
Memory Type	183 MHz SDR 2Mx32
Memory Amount	32 MB
Memory Speed	183 MHz
Controller Clock Speed	200 MHz
Colour Planes	32-bit colour buffer
Overlay Planes	1 16-bit Video overlay plane, software emulation for OpenGL overlay planes
Stencil Planes	8-bit stencil buffer
Alpha Planes	8-bit alpha buffer
Z-buffer	24-bit Z buffer
Total bits/pixel	64-bits
Maximum Vertical Refresh Rate	240 Hz
Maximum Pixel Clock	350 MHz
Multi-display support	Yes
Operating Systems	Microsoft® Windows® 2000, Windows NT 4.0 available from Compaq

NVIDIA® Quadro2 EX LP Graphics Controller

Dimensions (L x H x W) Approximately 6.5 x 3.8 x 0.6 inches (16.5 x 9.7 x 1.5 cm)

Resolution	Maximum Colours Supported	Maximum Refresh Rate	Memory Dedicated to Texture Support
640 x 480	16.7 M	120 Hz	28.4 MB
800 x 600	16.7 M	120 Hz	26.4 MB
1024 x 768	16.7 M	120 Hz	22.8 MB
1152 x 864	16.7 M	120 Hz	20.3 MB
1280 x 1024	16.7 M	100 Hz	16.6 MB
1600 x 1000	16.7 M	85 Hz	10.5 MB
1600 x 1200	64 K	100 Hz	20.8 MB
1600 x 1200	16.7 M	85 Hz	9.5 MB
1920 x 1080	64 K	85 Hz	19.9 MB
1920 x 1080	16.7 M	75 Hz	7.7 MB
1920 x 1200	64 K	85 Hz	18.5 MB
1920 x 1200	16.7 M	70Hz	5 MB

3D/2D controller	Integrated Quadro2 EX LP2-D/3-D 128-bit graphics processor unit (GPU)
VGA controller	Integrated into the Quadro2 EX LPGPU
Bus type	AGP 2X, 4X graphics bus
RAMDAC	350 MHz
Memory type	183 MHz SDR 2Mx32
Memory amount	32 MB
Memory speed	166 MHz
Controller clock speed	175 MHz
Colour planes	32-bit colour buffer
Overlay planes	One 16-bit Video overlay plane, software emulation for OpenGL overlay planes
Stencil planes	8-bit stencil buffer
Alpha planes	8-bit alpha buffer
Z-buffer	24-bit Z buffer
Total bits/pixel	64-bits
Maximum vertical refresh rate	240 Hz
Maximum pixel clock	350 MHz
Multi-display support	No
Operating systems	Microsoft® Windows® 2000 and Windows NT 4.0, both available from Compaq

Note: All drivers and enhanced software, including ELSA POWERdraft, can be found on the Compaq web site at**:** www.compaq.com/support/files/workstations/us/index.html.
Note: This Web site is available in English only

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